What is Claimed:

1. A boule for use in fabricating microchannel plates, the boule including:

a hollow glass tube formed of non-etchable glass having a plurality of flat inner surfaces, each surface is generally planar and extends generally parallel to the longitudinal axis of the tube.

2. The boule of claim 1 further including:

a plurality of optical fibers, each said optical fibers having a cladding layer formed of a non-etchable material and a core formed of etchable material, and a plurality of support rods formed of non-etchable material located between the flat inner surfaces and the optical fibers.

3. The boule of claim 1 wherein the packing tube has at least 8 flat inner surfaces.

4. The boule of claim 1 wherein the packing tube has 12 flat surfaces.

5. The boule of claim 1 wherein the width of the flat surfaces vary.

6. The boule of claim 1 wherein the width of each of a first plurality of flat surfaces has a first dimension and the width of each of a second plurality of flat surfaces has a second dimension different than the first dimension.

7. A boule in accordance with claim 6 wherein the first dimension is smaller than the second dimension.

8. The boule of claim 2 wherein the fibers, rods and packing tube are fused together.

9. The boule of claim 2 wherein the support rods have a cross-sectional shape including a flat surface for engaging the flat inner surfaces of the tube.

10. A microchannel plate formed from the boule of claim 8.

11. A method of forming a microchannel plate, said method comprising the steps of:

providing a bundle of fibers wherein, each fiber has an etchable core surrounded by a non-etchable cladding;

packing a plurality of said bundles into a hollow packing tube formed of non-etchable material and which has a plurality of flat inner surfaces;

positioning a plurality of support rods between said fibers and said flat inner surface to form a packed boule; and

fusing the fibers, packing tube and support rods.

12. The method of claim 11 wherein the glass tube has at least 8 flat surfaces.

13. The method of claim 11 wherein the glass tube has 12 flat surfaces.

14. The method of claim 11 wherein the width of the flat surfaces vary.

15. The method of claim 11 wherein the width of each a first plurality of flat surfaces has a first dimension and the width of each of a second plurality of flat surfaces has a second dimension different then the first dimension.

16. The method of claim 15 wherein the first dimension is small than the second dimension.

17. The method of claim 11 wherein the support rods have a cross-sectional shape including a flat surface and wherein at least some of the flat surfaces of the support rods engage the flat inner surfaces of the tube.

18. The microchannel plate formed by the method claim 11.